

REVIEW during 1896. The barometric means have not been reduced to standard gravity, but this correction will be given at some future date when the pressures are published on our Chart IV.

Mexican data for February, 1898.

Stations.	Altitude.	Mean barometer.	Temperature.			Relative humidity.	Precipitation.	Prevailing direction.	
			Max.	Min.	Mean.			Wind.	Cloud.
Agua Calientes.....	6,106	28.94	72.5	39.7	58.1	59	0.00	s.	w.
Arteaga (Coahuila).....	.....	.....	86.5	39.4	60.4	.....	1.14	.....	.....
Barousse (Coahuila).....	5,414	.....	77.5	41.0	57.7	.....	0.11	.....	.....
Colima (Sem.).....	.....	.....	.....	.....	74.8	.....	.....	.....	.....
Leon.....	5,934	24.30	77.2	37.4	57.6	47	0.67	sse.	ws.
Linares (N. Leon).....	1,188	28.83	91.0	36.5	65.1	70	0.91	se.	s.
Magdalena (Sonora).....	4,948	.....	.....	.....	59.2	.....	0.00	w.	ne.
Mazatlan (Sinaloa).....	25	29.96	75.9	56.7	68.0	79	0.00	nw.	sw.
Merida (Yucatan).....	50	30.01	94.6	54.0	73.2	64	0.74	ne.	se.
Mexico (Obs. Cent.).....	7,472	23.06	73.4	40.1	55.6	54	0.45	nw.	w.
Morelia (Seminario).....	6,401	23.96	76.8	39.9	59.9	60	0.30	sw.	w.
Oaxaca.....	5,764	25.09	83.5	43.0	64.8	54	0.35	nw.	sw.
Parros (Coahuila).....	3,968	.....	77.9	42.1	60.3	.....	0.28	.....	.....
Rosario (Sinaloa).....	.....	.....	83.3	53.2	66.0	.....	0.00	sw.	e.
Saltillo (Col. S. Juan).....	5,399	24.76	76.3	37.0	54.1	65	0.67	s.	sw.
Silao (Guanajuato).....	6,063	24.32	72.9	45.3	60.4	58	0.95	w.	w.
Torreón (Coahuila).....	3,720	.....	80.2	46.8	62.1	.....	0.16	.....	.....
Tuxpan.....	.....	.....	93.6	52.9	70.0	81	5.57	se.	n.
Vaqueria.....	.....	.....	77.5	29.3	57.6	.....	.....	.....	.....
Tuxtla (Gutierrez).....	1,864	28.16	96.8	51.4	72.1	63	0.19	.....	.....
Zapotlan (Seminario).....	5,078	.....	80.6	48.0	65.1	54	1.00	ase.	sw.

OBSERVATIONS AT HONOLULU, REPUBLIC OF HAWAII.

Through the kind cooperation of Mr. Curtis J. Lyons, Meteorologist to the Government Survey, a copy of the daily record at Honolulu is communicated to the Weather Bureau in advance of its official publication, and is herewith printed, as a special contribution, for the convenience of those who are studying the relations of the storms and weather of the United States to those of adjacent countries, with a view to long-range, seasonal predictions.

Meteorological observations at Honolulu, Republic of Hawaii.

Pressure is corrected for temperature and reduced to sea level, but the gravity correction, -0.06, is still to be applied.

The average direction and force of the wind and the average cloudiness for the whole day are given unless they have varied more than usual, in which case the extremes are given. The scale of wind force is 0 to 10. Two directions of wind, or values of wind force, connected by a dash, indicate change from one to the other.

The rainfall for twenty-four hours is given as measured at 6 a. m. on the respective dates.

FEBRUARY, 1898.

February, 1897.	Pressure at sea level.			Temperature.				Relative humidity.			Wind.		Cloudiness.	Rain measured at 6 a. m.
	6 a. m.	3 p. m.	9 p. m.	6 a. m.	2 p. m.	9 p. m.	Maximum.	Minimum.	6 a. m.	2 p. m.	9 p. m.	Direction.	Force.	
1.	29.94	29.88	29.97	67	76	70	73	66	70	86	s.	2	7-3	0.16
2.	29.98	29.87	29.94	67	73	74	73	67	82	86	s.-w.	2	9	0.01
3.	29.94	29.93	30.00	69	73	69	76	69	82	76	w.-ne.	1	7	0.76
4.	30.02	29.95	30.12	60	76	69	76	60	66	76	ne.	1	3	0.00
5.	30.07	30.05	30.10	62	77	68	73	60	59	69	ne.-sw.	1	0-1	0.00
6.	30.10	30.04	30.11	66	78	68	79	63	71	85	ne.-w-s.	1	4	0.00
7.	30.11	30.05	30.06	64	78	70	73	63	71	81	w.-s.	1	3	0.00
8.	30.09	30.03	30.09	64	78	69	73	63	60	80	nne.-sw.	1	1	0.00
9.	30.11	30.06	30.06	63	77	70	77	64	74	81	se.-sw.	2	7	0.00
10.	30.07	29.95	30.01	65	76	70	77	69	70	77	sw.	2	4-1	0.00
11.	29.96	29.85	29.86	69	78	74	78	64	86	78	s.	4	9	0.00
12.	29.87	29.87	29.90	64	70	68	77	62	81	81	w.s.	1	10	1.75
13.	29.94	29.90	29.98	63	75	67	75	57	70	76	w.n.	2	3-8	0.17
14.	29.89	29.83	29.86	59	75	64	73	55	62	79	nw.	2	5	0.00
15.	29.82	29.75	29.82	56	67	62	72	57	85	84	n.	1	1-10	0.00
16.	29.84	29.81	29.90	60	68	64	76	63	90	95	s.-w.	2	9	0.23
17.	29.90	29.85	29.90	65	75	65	85	67	74	82	s.	2	5	2.77
18.	29.92	29.92	29.99	67	74	69	72	67	80	86	s.	1	10-6	0.34
19.	29.96	29.92	29.98	67	72	68	78	64	82	81	ne.	1	10-4	0.12
20.	29.96	29.95	30.02	67	73	70	78	66	78	86	ne.	1	2-5	0.04
21.	30.00	29.93	30.00	68	77	68	75	64	71	90	s.	1	4	0.11
22.	29.99	29.88	29.93	65	74	66	78	63	70	85	*	1	10-5	0.18
23.	29.96	29.92	29.99	64	74	70	77	66	82	86	w.-ne.	1	2-10	0.12
24.	29.96	29.95	29.99	68	75	72	74	68	62	74	ene.	3	4	1.60
25.	29.99	29.96	30.04	69	73	69	74	65	82	76	ne.	3	9	0.03
26.	29.99	29.90	29.96	65	73	63	75	56	59	69	nne.	4	1	0.10
27.	29.90	29.81	29.90	58	73	67	72	54	70	66	nw.	3	3	0.00
28.	29.96	29.90	30.00	54	72	65	.....	.....	55	65	n.-ne.	2	2	0.00
Mean	29.97	29.83	29.96	64.2	74.1	68.3	76.0	68.0	73.0	79.9	.....	1.8	5	8.49

Mean temperature: 6+3+9+3 is 68.9°; extreme temperatures 79° and 54°.

*nw.-s.-ene.

METEOROLOGICAL OBSERVATIONS AT RIVAS, NICARAGUA.

The records contributed for many years by Dr. Earl Flint, at Rivas, Nicaragua, include barometric readings. His present station is at 11° 26' N., 85° 47' W. The observations at 7:17 a. m., local time are simultaneous with Greenwich 1 p. m. The altitude of his barometer is 36 meters above sea level, but until the barometer has been compared with a standard it seems hardly necessary to publish the daily readings. The wind force is recorded on the Beaufort scale, 0-12. When cloudiness is less than $\frac{1}{10}$, the letter F = few is recorded.

On his forms for December Mr. Flint states that the total annual rainfall for 1897 was 123.43 inches, or the greatest during the eighteen years of his observations.

His station is situated on the western shore of Lake Nicaragua, not far from the eastern end of the western division of the Nicaragua Canal. The volcano Ometepe, on an island in Lake Nicaragua, is about 10 miles northeast of his station. Mr. Flint's records occasionally mention the presence of clouds in the early morning on the summits of this mountain.

Observations at Rivas, Nicaragua.

DECEMBER, 1897.

Date.	Observations at 8 a. m.						Observations at 8 p. m.						Rainfall at 8 a. m.		
	Temperature.		Wind.		Clouds.		Temperature.		Wind.		Clouds.				
	Air.	Dew-point.	Direction.	Force.	Kind.	Amount.	Direction from.	Air.	Dew-point.	Direction.	Force.	Kind.		Amount.	Direction from.
1.....	75	69	ne.	2	.....	0	.....	75	75	ne.	2	ks	1	ne.	0.00
2.....	76	72	ne.	2	s	10	ne.	73	73	e.	2	c	1	e.	0.34
3.....	75	73	ne.	1	{c ks	9	ne.	77	73	ne.	0	ck	2	ne.	0.00
4.....	75	73	ne.	1	ck	5	ne.	78	72	ne.	2	k	F.	ne.	0.00
5.....	75.5	70	ne.	3	.....	0	.....	78	72	ne.	2	c	F.	ne.	0.00
6.....	75	73	ne.	2	.....	0	.....	78	74	se.	1	ks	7	se.	0.00
7.....	76	72	ne.	1	ks	F.	ne.	77	73	se.	1	ks	F.	se.	0.00
8.....	76	71	ne.	1	k	F.	ne.	78	72	se.	2	ck	9	se.	0.00
9.....	76	71	ne.	2	ck	10	ne.	78	72	se.	1	ck	5	se.	0.25
10.....	76	70	ne.	1	c	0	.....	78	72	se.	1	ck	10	se.	0.00
11.....	77	73	ne.	1	ks	10	ne.	78	72	se.	1	ck	5	se.	0.00
12.....	76	71	ne.	3	ks	F.	ne.	79	73	se.	1	c	F.	se.	0.00
13.....	75.5	70	ne.	2	ks	F.	ne.	79	73	se.	0	.....	0	.....	0.00
14.....	75.5	70	ne.	0	{ck ks	6	sw. ne.}	81	75	e.	1	.....	0	.....	0.00
15.....	76	71	ne.	3	.....	0	.....	77	73	se.	1	k	10	se.	0.23
16.....	76	72	ne.	2	ck	3	ne.	79	73	ne.	3	.....	0	.....	0.00
17.....	77	73	ne.	3	{ck ks	2	se. ne.}	79	73	ne.	3	.....	0	.....	0.00
18.....	76	70	ne.	3	.....	0	.....	78	71	ne.	2	.....	0	.....	0.00
19.....	76	71	se.	0	ks	5	se.	78	77	ne.	1	.....	0	.....	0.00
20.....	76	72	ne.	0	ks	8	ne.	78	74	se.	1	.....	0	.....	0.00
21.....	76.5	72	ne.	1	ks	1	ne.	79	73	ne.	1	.....	0	.....	0.00
22.....	77	73	ne.	2	ks	10	ne.	79	73	ne.	1	ks	5	ne.	0.00
23.....	77	73	ne.	2	ck	9	ne.	77	73	e.	1	ks	10	e.	0.00
24.....	75.5	71	ne.	2	{ck ks	5	ne.}	78	72	ne.	3	.....	0	.....	0.46
25.....	76	71	ne.	3	.....	0	.....	78	72	ne.	2	.....	0	.....	0.00
26.....	77	70	ne.	3	ck	5	se.	79	73	ne.	2	.....	0	.....	0.00
27.....	77	73	ne.	2	c	1	se.	80	73	ne.	2	ck	2	ne.	0.00
28.....	78	72	ne.	2	ck	5	ne.	79	73	ne.	1	ck	1	ne.	0.00
29.....	78	70	ne.	3	ck	8	ne.	79	73	ne.	3	c	2	ne.	0.00
30.....	76	67	ne.	3	ck	2	ne.	76	70	ne.	3	c	1	ne.	0.00
31.....	76	67	ne.	2	c, ck	2	ne.	77	73	ne.	2	c	F.	ne.	0.00
Means	76.1	8.7	78.0	2.3	1.28

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1	76.5	70	ne.	3	ks	10	ne.	77	70	ne.	3	ck	9	ne.	0.00
2	73	62	ne.	2	c, cs	8	se.	74	63	ne.	3-4	c	10	ne.	0.00
3	71.5	52	ne.	3	{ cs, ks	9	{ sw, ne.	74.5	63	ne.	3-4	ck	5	ne.	0.00
4	71	58	ne.	3	c, ck	2	{ sw, ne.	74	63	ne.	2	c	F.	ne.	0.00
5	72	63	ne.	2	ck	F.	ne.	78	71	ne.	2	ck	10	ne.	0.00
6	74	68	ne.	2	ck	5	ne.	77	70	ne.	2	ks	F.	ne.	0.00
7	74	68	ne.	2	ks	F.	ne.	80	72	ne.	1	c	F.	ne.	0.00
8	75	68	ne.	2	ck	1	ne.	78	72	ne.	2	c	F.	ne.	0.00
9	79	73	ne.	1	ks	4	ne.	78	72	se.	1	ks	F.	se.	0.00
10	75.5	73	ne.	1	ks	8	ne.	77	71	se.	1	.....	0	.....	0.00
11	76	71	e.	2	ks	1	e.	77	71	se.	1	ks	10	se.	0.13
12	75.5	73	ne.	1	ks	6	ne.	77.5	72	e.	2	ks	5	e.	0.00
13	75.5	73	ne.	2	ks	3	ne.	78	72	e.	2	.....	0	.....	0.00
14	75	68	se.	1	.....	0	.....	79	72	se.	0	.....	0	.....	0.00
15	75	68	se.	2	ks	10	se.	78	73	se.	2	.....	0	.....	0.00
16	76.5	73	se.	2	ks	10	se.	77	71	se.	2	.....	0	.....	0.00

Observations at Rivas, Nicaragua—Continued.

JANUARY—Continued.

Date.	Observations at 8 a. m.							Observations at 8 p. m.							Rainfall at 8 a. m.
	Tempera- ture.		Wind.		Clouds.			Tempera- ture.		Wind.		Clouds.			
	Air.	Dew-point.	Direction.	Force.	Kind.	Amount.	Direction from.	Air.	Dew-point.	Direction.	Force.	Kind.	Amount.	Direction from.	
17	75	70	ne.	2	ks	F.	ne.	76	71	se.	2	.....	F.	se.	0.15
18	75	70	ne.	2-3	ck, ks	5	sw. ne.	77	70	se.	2	.....	0	.....	0.00
19	76	71	e.	1	ks	10	e.	80	74	se.	0	0	0	.....	0.00
20	76	72	ne.	1	c	F.	ne.	78	72	se.	2	.....	0	.....	0.00
21	76	70	e.	2	ck	5	e.	78.5	73	e.	2	.....	0	.....	0.00
22	76	72	se.	1	ks	1	se.	79	73	e.	2	.....	0	.....	0.00
23	76	71	se.	2	cs	2	sw.	78.5	71	se.	2	ks	2	se.	0.18
24	76	71	se.	2	n	10	se.	77	71	se.	2	ks	5	se.	0.00
25	75.5	73	se.	2	ks	2	se.	78	72	se.	2	ks	10	se.	0.00
26	76	73	ne.	1	ks	10	ne.	76.5	73	se.	2-3	ks	10	se.	0.62
27	74	68	e.	4	.....	0	e.	72	69	se.	2-3	ks	10	se.	0.00
28	75	68	e.	2-3	ks	2	e.	77	72	se.	2	0	3	se.	0.00
29	75	68	e.	2-4	ks	4	e.	78	70	e.	3	.....	0	.....	0.00
30	74	68	ne.	1	ks	F.	ne.	76.5	69	e.	2	c	F.	e.	0.00
31	75	68	se.	2	c, ks	F.	se.	78	71	e.	2	ck	5	se.	0.00
Means ..	75.0	4.1	77.2	2.7	1.07

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1.....	75.5	68	se.	2	ck.	3	se.	77	70	se.	3	ck.	5	se.	0.00
2.....	75	66	se.	3	ck.	2	se.	77	70	se.	1	ck.	8	se.	0.00
3.....	75	69	ne.	1	ck.	1	ne.	76	69	se.	2	c.	1	se.	0.00
4.....	74	67	e.	3	c, ck.	1	e.	75	69	se.	2	c.	2	se.	0.00
5.....	73	64	e.	2	ck.	10	e.	77	70	se.	1	ck.	5	se.	0.00
6.....	73	66	e.	1	.....	0	.....	78	71	e.	1	.....	0	.....	0.00
7.....	74	65	se.	1	.....	0	.....	78	72	e.	2	ck.	F.	e.	0.00
8.....	73	66	se.	1	.....	0	.....	77	70	se.	1	ck.	5	se.	0.00
9.....	74	67	se.	1	ks.	4	se.	78	72	se.	2	ks.	10	e.	0.00
10.....	75	72	se.	1	ks.	10	se.	78	72	se.	2	ks.	3	se.	0.00
11.....	75	71	e.	1	ks.	5	e.	79	72	e.	1	.....	0	.....	0.00
12.....	75	69	ne.	1	c.	1	ne.	79	72	ne.	2	ks.	3	?	0.00
13.....	75	68	ne.	1	ck.	2	ne.	78	70	se.	1	.....	0	.....	0.00
14.....	74	68	ne.	2-3	ks.	1	ne.	78	69	e.	2	.....	0	.....	0.00
15.....	75	69	e.	1	ks.	2	e.	78	70	se.	2	.....	0	.....	0.00
16.....	74.5	66	e.	2	ks.	1	e.	77	70	e.	2	.....	0	.....	0.00
17.....	75	69	ne.	2	ks.	F.	ne.	78	70	ne.	2	.....	F.	?	0.00
18.....	76	69	ne.	2	ks.	2	ne.	79	72	ne.	2	.....	0	.....	0.00
19.....	76	73	ne.	1	ks.	10	ne.	78	72	ne.	2	.....	0	.....	0.12
20.....	75	69	ne.	1	.....	0	.....	78	72	ne.	1	.....	0	.....	0.00
21.....	75	72	ne.	1	ck.	2	ne.	78	72	ne.	2	.....	0	.....	0.00
22.....	75	67	ne.	1	ks.	F.	ne.	78	72	ne.	2	.....	0	.....	0.00
23.....	75	69	ne.	2	ks.	1	ne.	79	69	e.	2	.....	0	.....	0.00
24.....	74.5	68	ne.	2	ks.	F.	ne.	79	72	e.	2	.....	0	.....	0.00
25.....	75.5	68	ne.	2	ks.	F.	ne.	76	69	ne.	2-3	.....	0	.....	0.00
26.....	74	67	ne.	2-3	ck.	1	ne.	77	70	ne.	2	c.	F.	ne.	0.00
27.....	74	68	ne.	1	c.	F.	se.	77	71	e.	1	ck.	1	e.	0.00
28.....	74	65	e.	1	ck.	2	e.	77	70	e.	1	c.	1	e.	0.00
Means ..	74.6	.....	.....	.....	.....	2.2	.....	77.0	.....	.....	.....	.....	1.5	.....	0.12

Mr. Flint notes that on February 12 the cirro-stratus clouds covering the entire sky in the afternoon were arranged in parallel bands, all converging toward the vanishing points in the northwest and southeast, a phenomenon that he had never previously observed.

THE MAURITIUS CYCLONE OF DECEMBER 5, 1897.¹

By T. F. CLAXTON, Director Royal Alfred Observatory (dated December 29, 1897).

The center of a cyclone passed over Mauritius between 10 and 11 p. m. on Sunday, December 5.

Photographs from meteorological self-registers at the Royal Alfred Observatory of Mauritius during the passage of the cyclone of December 4-6, 1897, are shown on Chart X.

From observations received from different parts of the island it would appear that the center of the calm area approached from north by west, and traveled south by east.

More damage was done in the eastern districts than elsewhere.

¹The Editor regrets that by reason of some difficulty encountered in reproducing the diagram of curves communicated by Mr. Claxton, this article could not appear in the MONTHLY WEATHER REVIEW for December.

At the observatory the center passed a little to the eastward. A lull occurred suddenly at 9:54, the wind being from east-southeast. No change in the direction occurred till 9:58, when the wind rapidly backed to south-southwest, then to north-northwest one-half west, veered suddenly to south-southwest, and then backed again to west-southwest and west by north.

After the lull at 10:10 the wind came in puffs from south-southwest, increasing in force till the wind reached west by south (10:45 p. m.).

The following table shows the movements of the barometer, wind, etc., from 4 d. 9 h. to 6 d. 9 h.:

Day and hour, local mean civil time.	Barometer.		Wind.		Temperature.		
	Corrected and reduced to sea level.	Rise (+) or fall (-) per hour, corrected for variation.	Mean direction.	Velocity, in miles per hour.	Of the air.	Of evaporation (wet bulb).	Relative humidity.
1897.	d.	h. m.	Inches.		°	°	%
Saturday, Dec. 4.	9.....	29.922	e. by s.	19.0	83.1	75.0	63.7
	17.....	29.934	e. by n.	18.0	79.5	75.2	79.0
	23.....	29.873	e. by n.	14.4	78.1	74.2	79.6
Sunday, Dec. 5.	4.....	29.806	e.	21.0	77.4	74.0	82.0
	8.....	29.816	e.	23.0	78.4	75.6	85.0
	9.....	29.807	e.	22.7	80.0	75.9	79.5
	10.....	29.795	e.	27.2	80.5	76.1	78.5
	11.....	29.780	e.	30.6	81.8	76.2	73.6
Noon	12.....	29.756	e.	29.9	81.8	76.0	72.8
	13.....	29.728	e.	28.8	81.0	75.9	75.6
	14.....	29.700	e.	34.2	78.1	75.3	85.0
	15.....	29.671	e.	31.3	77.2	75.0	88.0
	16.....	29.639	e. by n.	30.7	77.4	74.2	83.0
	17.....	29.617	e. by n.	38.3	75.9	71.5	77.9
	18.....	29.540	e. by n.	45.7	75.9	72.2	80.5
	19.....	29.511	e.	58.3	74.1	72.1	89.0
	20.....	29.385	ese.	61.5	.....	.....	.....
	21.....	29.196	ese.	71.0	.....	.....	.....
	21 13.	28.996	e. by s.	82.0	.....	.....	.....
	21 40.	28.924	ese.	40.0	.....	.....	.....
	21 58.	28.966	ese.	14.0	.....	.....	.....
	22.....	28.969	s. by w.	14.0	.....	.....	.....
	22 15.	29.003	s.	12.0	.....	.....	.....
	22 23.	28.992	w. by n.	35.0	.....	.....	.....
	22 45.	29.010	w. by s.	56.0	.....	.....	.....
	23.....	29.234	w. by s.	50.0	.....	.....	.....
Monday, Dec. 6.	0.....	29.451	w. by n.	25.0	.....	.....	.....
	1.....	29.564	w. by n. & n.	25.5	.....	.....	.....
	2.....	29.644	wnw.	26.0	.....	.....	.....
	3.....	29.707	nw. by w.	27.0	.....	.....	.....
	4.....	29.741	nw. by w.	27.0	.....	.....	.....
	5.....	29.795	wnw.	26.0	74.3	73.0	92.5
	6.....	29.842	nw. & w.	27.5	75.4	74.2	93.2
	7.....	29.872	nw.	30.0	75.9	74.6	93.1
	8.....	.....	nw. & n.	30.5	76.8	75.3	91.8
	9.....	.....	n. by w.	31.0	77.5	75.8	90.5

NOTE.—The values in brackets are the smoothed values derived from measurements made every 34 minutes.

At 5 d. 19.5 hours the photographic lamp of the dry-bulb thermometer was extinguished by the wind.

From the above table it will be seen that no remarkable fall in the barometer took place till Sunday afternoon. At 3:20 p. m. the following telegram was dispatched: "The wind will probably increase during the night, but no immediate danger."

Soon after 5 p. m. an accident happened to the observatory telegraph wire, and as in 1892, so now communication was cut off, however the following warning was issued and conveyed by hand to the Pamplemousses railway station:

6 p. m.—"Center of depression to north-northwest; conditions more unfavorable; precautions are necessary; will telegraph at 7 p. m."

7 p. m.—"The barometer is falling at an accelerated rate; the velocity of the wind will probably increase if the wind veers to northeast before midnight."

8 p. m.—"The center is approaching, but will pass to the eastward if the wind continues to back at its present rate."

As the center of the depression was to the west of north, the slight veering of the wind at 4 p. m., and the accelerated fall of the barometer were considered most unfavorable after a persistent east wind for seven hours. Shortly before 8